

PARALLEL REACTOR FOR SAMPLING AND CONDUCTING IN SITU
FLOW-THROUGH REACTIONS AND A METHOD OF USING SAME

ABSTRACT OF THE DISCLOSURE

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An apparatus for parallel processing of reaction mixtures, including a reactor block including reaction chambers for containing reaction mixtures under pressure, the reactor block further including a first sidewall, a second sidewall, and a first plurality of fluid flow paths providing fluid communication with the first sidewall and respective reaction chambers and the second sidewall and respective reaction chambers;; a stirring system including a base plate defining a second plurality of flow paths, wherein respective flow paths of said second plurality of flow paths are in fluid communication with respective reaction chambers and respective fluid flow paths of said first plurality of flow paths, and the base plate also supports a plurality of stirring blade assemblies for mixing the reaction mixtures; interchangeable manifolds supported by the first sidewall and the second sidewall, the interchangeable manifolds defining a plurality of manifold inlet/outlet ports, wherein respective inlet/outlet ports of said plurality of inlet/outlet ports are in communication with respective fluid flow paths of said first plurality of fluid flow paths and permit fluid to be introduced into or vented from the respective reaction chambers; and a sampling manifold assembly coupled in fluid communication with the respective reaction chambers, wherein a portion of the reaction mixture retained in the respective reaction chambers can be withdrawn from the respective reaction chamber through respective fluid flow paths of said first plurality of fluid flow paths and respective flow paths of said second plurality of flow paths, or both, without depressurizing or lowering the pressure in the respective reaction chamber.

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